

Claims

A photoreceiver cell with separation of color components of light incident to its surface, formed in a silicon substrate of the conductivity of the first type with ohmic contact and comprising:

- a first region of the conductivity of the second type, located in the near-surface substrate layer, which is divided into the first, second and third portions by the regions of silicon dioxide and equipped with the first, second and third ohmic contacts, and which form the first, second and third p-n junctions with the substrate;
- a first heavily-doped region of the same conductivity type as the substrate, located under said first region of the conductivity of the second type, which forms a first potential barrier for charge carriers generated in the substrate region under the first barrier;
- a second heavily-doped region of the same conductivity type as the substrate, located under said first heavily-doped region, which forms a second potential barrier for charge carriers generated in the substrate region under the second barrier;
- a third heavily-doped region of the same conductivity type as the substrate, located under said second heavily-doped region, which forms a third potential barrier for charge carriers generated in the substrate region under the third barrier;
- said first, second and third heavily-doped regions have relative positioning and configuration, which provide formation of the first and the second channels for diffusion of the secondary carriers generated in the substrate regions located under the first and the second potential barriers to the first and the third p-n junctions respectively; in this case, the length of the channels does not exceed the diffusion length of the secondary charge carriers;
- said first, second and third ohmic contacts are connected to the first, second and third outputs of the photosensitive cell, which are connected via the

readout circuits to the positive pole of the voltage source, whose negative pole is connected to the substrate via an ohmic contact.